



*Integrated
Environmental
Solutions*

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October 19, 2001

Ms. Gwen Zervas
Case Manager
New Jersey Department of Environmental Protection (NJDEP)
Bureau of Federal Case Management
Division of Responsible Site Party Remediation
CN 028
Trenton, NJ 08625-0028

Subject: L.E. Carpenter & Company (LEC), Wharton, NJ – NJD002168748
Results of MW19/Hot Spot 1 Area Well Installation and Groundwater Sampling
RMT Project No. 00-03868.25

Dear Ms. Zervas:

RMT, Inc. (RMT) prepared this letter report on behalf of L.E. Carpenter and Company (LEC) for their facility located in Wharton, New Jersey (Figure 1). We describe installation of a groundwater monitoring well required by the New Jersey Department of Environmental Protection (DEP) and the United States Environmental Protection Agency Region II (EPA). This report also summarizes the results of groundwater sampling conducted in the MW-19 area on August 1 and 2, 2001, and laboratory testing of the groundwater samples.

RMT installed, developed, and sampled monitoring well MW19-9D, which we designed to monitor a deeper portion of the shallow groundwater. Installation of this well was required based on letters from DEP dated April 13 and August 1, 2000. Based on a conversation that we had on June 20, 2001, and as described in our June 27, 2001 letter, DEP/EPA stated that additional shallow wells requested in the April 13 and August 1 letters were unnecessary. The well specifications for MW19-9D are in accordance with RMT's workplan dated October 2000 and in our letter dated February 13, 2001.

1. Monitoring Well Locations

Figure 2 shows the location of all the MW-19 area monitoring wells. Following the recent installation of MW19-9D, a NJ licensed surveyor surveyed the well and site. Figure 2 incorporates the newly surveyed features and resulting base-map that accurately represents the location of each well, and nearby buildings, utilities, fences, and streets. The surveyor also measured the top of casing elevation for the new and selected existing wells.



2. Groundwater Flow

Figure 2 depicts the MW-19 hot-spot area groundwater-elevation contours, which again verify that the regional sewer line intercepts and locally controls the direction of shallow groundwater flow. RMT has evaluated groundwater flow in this area using data from measuring events we conducted in January, April, July, and October 2000, and January, April, and July (this report) 2001. The flow direction in this area is consistent for each of those sampling events (for example, compare groundwater contours on Figures 3 and 4 in this report). Groundwater flow at the northwest end of Building 9 is northeastward to east under a hydraulic gradient of approximately 0.0017 ft/ft.

3. New Well MW19-9D

The new well MW19-9D was installed and developed on July 10th and 11th, and is located on Figure 3. The geologic and well completion log is in Attachment 1. The reason LEC installed the well was to assure DEP/EPA that no contaminated groundwater was flowing under the regional-sewer toward the residences on the north side of Ross Street. In the field before drilling commenced, the on-site NJDEP representative approved the location of this new well. Summit Drilling Company used an air-rotary rig to drill the borehole used to construct the well. We specified the use of the air rotary method because tight cobble-bearing formations are typically present that often prevent successful drilling by hollow stem auger techniques. We designed and installed the screened portion of the well as specified in our February 13, 2001 letter, from 15 to 25 feet below the shallow water table (from 25 to 35 feet below grade).

4. Delineation of Groundwater Contamination

Table 1 summarizes concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) and di-ethylhexyl phthalate (DEHP) for all of the MW-19 area groundwater monitoring wells. RMT sampled groundwater from the MW-19 area wells on August 1 and 2, 2001; approximately three weeks after we installed and developed new well MW19-9D. The data show that concentrations of BTEX and DEHP have decreased since 1998 and 1999.

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The DEHP concentrations are all substantially lower than concentrations measured in 1998 and 1999, except for MW19-2 which shows a slight increase. In fact, the New Jersey groundwater quality standard (NJDWQS) for DEHP is now only exceeded in one well, MW19-1. None of the groundwater from monitoring wells downgradient from MW19-1 exceeds the NJGWQS. MW19-1 is located close to the former 10,000-gallon underground storage tanks (UST's E-3 and E-4) that likely were responsible for releasing some of the DEHP and BTEX constituents. However, these former UST's are no longer a source for DEHP and BTEX contamination in this area because LEC removed them in 1991. In addition, the LEC printing processes and material storage practices that occurred in Bldg 9 that may have resulted in releases of both DEHP and BTEX were stopped in 1987. Finally, there is no free product in this area. Therefore, there is no longer any active primary source for DEHP or BTEX remaining in the MW-19 Hot-Spot 1 area. The decrease in concentrations also supports a lack of ongoing sources of contamination and suggests that dissolved contaminants are naturally attenuating.

Figure 3 shows isoconcentration contours for total BTEX levels in ppm (mg/L) with respect to the groundwater elevation contours. The isoconcentration lines are in general agreement with the groundwater flow direction. Figure 4 shows the isoconcentration contours for total BTEX we submitted in our May 15, 2000 letter. Figures 3 and 4 show that the concentrations of BTEX in August 2001 have decreased substantially since 1998/1999.

No BTEX or DEHP were detected in MW19-9D (Table 1). This shows that there is no migration of these constituents downward and to the north under Ross Street and the regional interceptor sewer. In addition, the lack of downward migration of contaminants is evidenced by the hydraulic data we discuss below.

Table 2 lists the monitoring well specifications, and includes water level measurements and groundwater elevations. Although DEP/EPA retracted their earlier requirement to pair a shallow well with MW19-9D, we installed it only about 12 feet north of MW19-6 because of access issues. The driller had to conform to OSHA requirements and maintain a safe distance from the overhead power lines that overhang the north side of Ross Street. As stated above, the on-site DEP representative approved the well location in the field before drilling commenced. The closeness of MW19-6 and MW19-9D allows

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us to make a general comparison between groundwater elevations versus screened interval and to evaluate the vertical gradient. The hydraulic head at MW19-9D is 0.4 feet higher than at MW19-6, indicating a significant upward vertical gradient. An upward vertical gradient is consistent with all other deep/shallow well clusters across the site. As you know, RMT earlier predicted an upward vertical gradient for this location because of the other site well-cluster data (including nearby piezometers GEI-2I and GEI-2S), and because of the proximity of the regional sewer line, which locally controls shallow groundwater flow. The vertical distance between the middle of the MW19-6 and the MW19-9D well screens is 15 feet (Table 2). Given the difference in hydraulic head between the two wells, the upward vertical hydraulic gradient is about 0.4 ft/15 ft., or 0.027 ft/ft. This is an order of magnitude greater than the horizontal hydraulic gradient of 0.0017 measured for this area.

The groundwater flow directions and contaminant distributions both show that the current group of wells are adequate to monitor groundwater quality within and downgradient from the MW-19/Hot Spot 1 area at LEC.

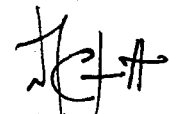
RMT believes there is no need to perform additional delineation work in the MW-19/Hot Spot 1 area. We recommend conducting future groundwater monitoring in this area as part of the site-wide groundwater-monitoring program. Details of our recommendations for future continued monitoring in this area are included in our May 2001 workplan for evaluating Monitored Natural Attenuation (MNA) for dissolved phase constituents.

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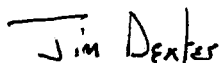
We are also supplying additional details in a separate letter responding to your review of the MNA workplan.

Sincerely,

RMT, Inc.



Nicholas J. Clevett
Project Manager



James J. Dexter
Project Director 

Attachments:	<u>Figure 1</u>	Site Location Map
	<u>Figure 2</u>	MW-19 Hot-Spot 1 Groundwater Elevation Contours for July 2001.
	<u>Figure 3</u>	Isoconcentration Contours for Total BTEX (PPM) in Shallow Groundwater at the MW19/Hot Spot Area; August 2001.
	<u>Figure 4</u>	Isoconcentration Contours for Total BTEX (PPM) in Shallow Groundwater at the MW19/Hot Spot Area; 1998 and 1999.
	<u>Table 1</u>	MW19/Hot Spot 1 Groundwater Monitoring Data
	<u>Table 2</u>	MW19/Hot Spot 1 Water Levels and Groundwater Elevations
	<u>Attachment 1</u>	Report Certification
	<u>Attachment 2</u>	Geologic and Well Completion Log for MW19-9D
	<u>Attachment 3</u>	Well Permit, Monitoring Well Record & MW19-9D Form B Location Certification
	Attachment 4	Laboratory Analytical Data

cc: Cris Anderson (LEC)
Stephen Cipot (USEPA)
Drew Diefendorf (RMT)
Eric Swanson (RMT)
Central Files (2)

Table 1

MW19/Hot Spot 1 Groundwater Monitoring Data

TABLE 1
L.E. CARPENTER - Wharton, New Jersey
MW19/Hot Spot 1 Groundwater Monitoring Data

MONITORING WELLS	SAMPLING DATE		CHEMICAL ANALYSIS RESULTS					ABOVE NJGWQS?				
	DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)
			ug/l	ug/l	ug/l	ug/l	ug/l					
NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS)			1	700	1,000	40	30					
MW19												
Dilution factor for BTEX 2000	24-Feb-95	1	<660	1700	110000	10000	NS	YES	YES	YES	YES	--
Dilution factor for BTEX 100	14-Jun-95	2	<150	3400	140000	17000	NS	YES	YES	YES	YES	--
Dilution factor 5000 for BTEX & 2 for DEHP; MDL for Benzene 1000 ug/l	23-Apr-98	2	<1000	2850	76700	14900	6.6	YES	YES	YES	YES	NO
Dilution factor for BTEX 500	02-Aug-01	3	<95	3000	62000	17000	2.9	YES	YES	YES	YES	NO
MW19-1												
Dilution factor for BTEX 200	12-Mar-98	1	<40	219	4270	1160	190	YES	NO	YES	YES	YES
	02-Aug-01	3	<0.2	1.2	<0.2	<0.2	85	NO	NO	NO	NO	YES
MW19-2												
Dilution factor for BTEX 250	12-Mar-98	1	<50	1130	9830	6010	8.8	YES	YES	YES	YES	NO
Dilution factor for BTEX 2	01-Aug-01	3	<0.4	21	160	82	16	NO	NO	NO	YES	NO
MW19-3												
	12-Mar-98	1	<0.2	<0.14	<0.14	<0.5	<1.2	NO	NO	NO	NO	NO
	02-Aug-01	3	<0.2	<0.2	<0.2	<0.2	<0.5	NO	NO	NO	NO	NO
MW19-4												
	12-Mar-98	1	<0.2	<0.14	<0.14	<0.5	<1.3	NO	NO	NO	NO	NO
	02-Aug-01	3	<0.2	<0.2	<0.2	<0.2	<0.5	NO	NO	NO	NO	NO
MW19-5												
Dilution factor for BTEX 5000	12-Mar-98	1	<1000	1920	123,000	10,100	42	YES	YES	YES	YES	YES
Dilution factor for BTEX 1000	02-Aug-01	3	<190	870	79,000	5,200	3.2	YES	YES	YES	YES	NO
MW19-6												
Dilution factor for BTEX 200	15-Nov-99	4	<62	94	3,400	500	32	YES	NO	YES	YES	YES
Dilution factor for BTEX 2	01-Aug-01	3	<0.4	14	390	47	28	NO	NO	NO	YES	NO
MW19-7												
Dilution factor for BTEX 50	15-Nov-99	4	<16	100	51	1,400	<4.1	YES	NO	NO	YES	NO
Dilution factor for BTEX 2	01-Aug-01	3	6.7	7	13	680	<0.4	YES	NO	NO	YES	NO
MW19-8												
Dilution factor for BTEX 50	15-Nov-99	4	<0.31	<0.38	<0.34	<0.40	<4.1	NO	NO	NO	NO	NO
Dilution factor for BTEX 2	01-Aug-01	3	<0.5	<0.2	<0.2	<0.2	<0.4	NO	NO	NO	NO	NO
MW19-9D												
Dilution factor for BTEX 2	01-Aug-01	3	<0.2	<0.2	<0.2	<0.2	<0.5	NO	NO	NO	NO	NO

680

Concentration exceeds NJGWQS

Table 2

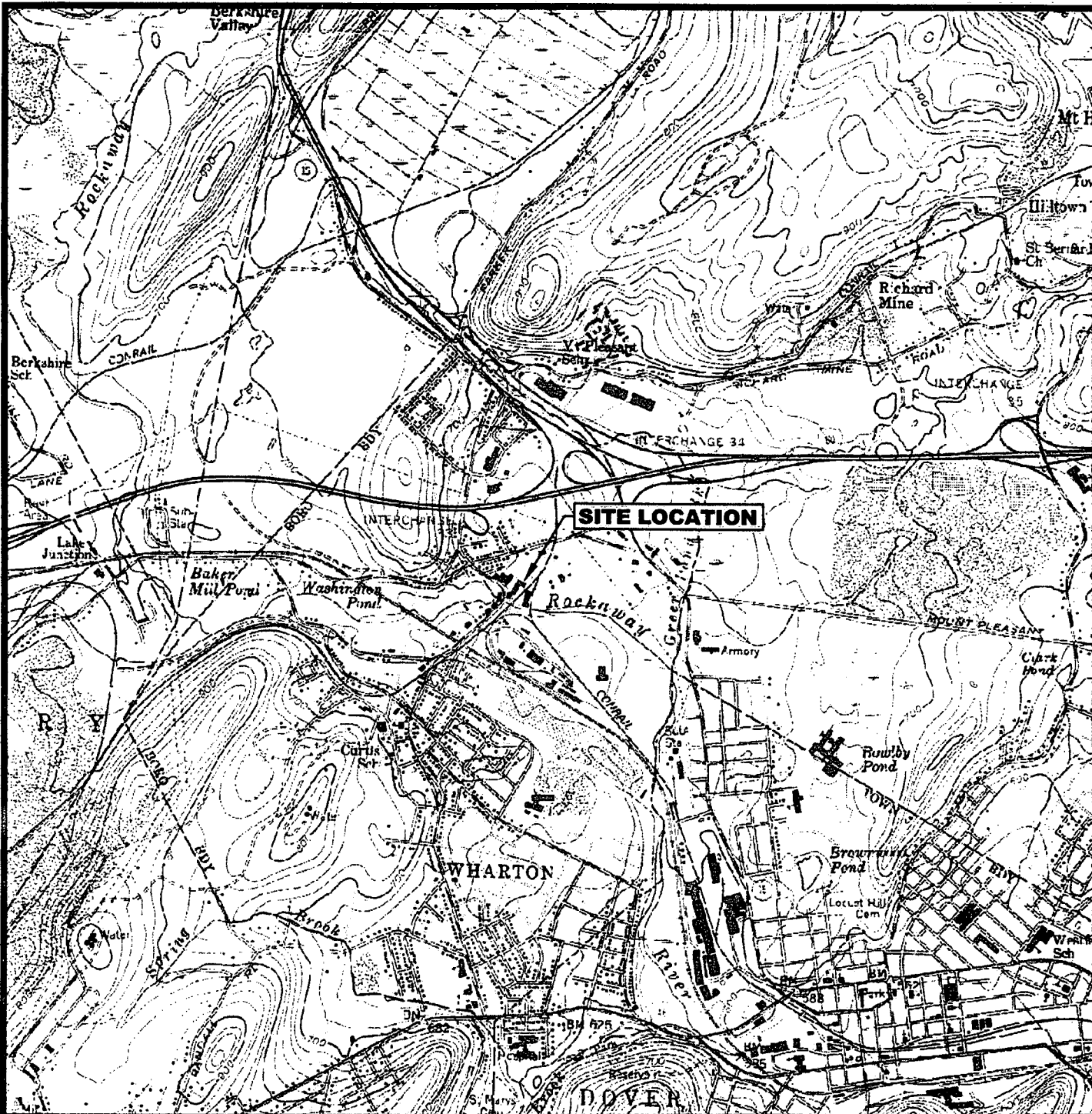
MW19/Hot Spot 1 Water Levels and Groundwater Elevations

TABLE 2
MW19/Hot Spot 1 Water Level Elevations
L.E. Carpenter, Wharton, New Jersey

WELL LOCATION	WELL TYPE	WELL INSTALLATION AND CONSTRUCTION INFORMATION										PROFESSIONAL SURVEY INFORMATION				ELEVATIONS (FT. MSL)			QUARTERLY MEASUREMENT INFORMATION						
		MANAGING CONSULTANT	INSTALLATION DATE	TOTAL WELL DEPTH (FT)	WELL DIAMETER (IN)	SCREEN MATERIAL	SLOT SIZE (IN)	TOP OF SCREEN (FT)	BOTTOM OF SCREEN (FT)	SCREENED INTERVAL (FT)	AQUIFER SYSTEM	BASELINE LOCATION (feet) ⁽¹⁾		GEODETTIC LOCATION		GROUND	OUTER CASING	INNER WELL	MEAS. DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL ELEVATIONS
GEI-2I	Piezometer	ROY F. WESTON	April to October 1989	46.28	2.00	PVC	0.02	31.50	41.50	10.00	I	754373.99	470499.76	40° 54' 17.4"	74° 34' 43.1"	635.92	638.35	638.20	24-Jul-01	-	11.51	-	626.69	-	-
																635.92	638.35	638.20	01-Aug-01	-	NM	-	-	-	-
GEI-2S	Piezometer	ROY F. WESTON	April to October 1989	22.21	2.00	PVC	0.02	10.00	20.00	10.00	S	754566.00	470506.18	40° 54' 17.3"	74° 34' 43.0"	635.46	637.87	637.67	24-Jul-01	-	11.31	-	626.36	-	-
																635.46	637.87	637.67	01-Aug-01	-	NM	-	-	-	-
MW-16S	Monitoring Well	ROY F. WESTON	April to October 1989	23.90	4.00	STEEL	0.02	7.37	17.41	10.00	S	754424.11	470704.10	40° 54' 15.9"	74° 34' 40.4"	632.57	634.69	634.47	24-Jul-01	-	8.52	-	625.95	-	-
																632.57	634.69	634.47	01-Aug-01	-	NM	-	-	-	-
MW-16I	Monitoring Well	ROY F. WESTON	April to October 1989	46.53	2.00	STEEL	0.02	32.22	42.26	10.00	I	754435.10	470710.17	40° 54' 16.0"	74° 34' 40.3"	632.43	635.08	634.96	24-Jul-01	-	9.01	-	625.95	-	-
																632.43	635.08	634.96	01-Aug-01	-	NM	-	-	-	-
MW-19	Monitoring Well	ROY F. WESTON	May 20, 1991	17.00	4.00	STEEL	0.02	7.00	17.00	10.00	S	754537.15	470454.45	40° 54' 17.1"	74° 34' 43.7"	636.72	639.24	638.88	24-Jul-01	-	12.47	-	626.41	-	-
																636.72	639.24	638.88	02-Aug-01	-	12.82	-	626.06	-	-
MW-19-1	Monitoring Well	RMT, INC.	February 17, 1998	17.00	4.00	STEEL	0.01	6.00	15.50	9.50	S	754334.52	470427.63	40° 54' 17.0"	74° 34' 44.0"	636.50	639.26	638.86	24-Jul-01	-	12.45	-	626.41	-	-
																636.50	639.26	638.86	02-Aug-01	-	12.80	-	626.06	-	-
MW-19-2	Monitoring Well	RMT, INC.	February 17, 1998	16.00	4.00	STEEL	0.01	6.00	16.00	10.00	S	754551.81	470429.56	40° 54' 17.2"	74° 34' 44.0"	637.05	639.36	638.76	24-Jul-01	-	12.34	-	626.42	-	-
																637.05	639.36	638.76	01-Aug-01	-	12.66	-	626.10	-	-
MW-19-3	Monitoring Well	RMT, INC.	February 18, 1998	16.00	4.00	STEEL	0.01	6.00	15.50	9.50	S	754539.40	470394.20	40° 54' 17.1"	74° 34' 44.5"	637.34	640.04	639.65	24-Jul-01	-	13.20	-	626.45	-	-
																637.34	640.04	639.65	02-Aug-01	-	13.54	-	626.11	-	-
MW-19-4	Monitoring Well	RMT, INC.	February 18, 1998	16.00	4.00	STEEL	0.01	6.00	15.50	9.50	S	754505.39	470432.08	40° 54' 16.7"	74° 34' 44.0"	636.27	638.44	637.74	24-Jul-01	-	11.24	-	626.50	-	-
																636.27	638.44	637.74	02-Aug-01	-	11.59	-	626.15	-	-
MW-19-5	Monitoring Well	RMT, INC.	February 18, 1998	16.00	2.00	PVC	0.01	6.00	15.50	9.50	S	754565.53	470470.75	40° 54' 17.3"	74° 34' 43.5"	636.39	639.07	638.74	24-Jul-01	-	12.39	-	626.35	-	-
																636.39	639.07	638.74	02-Aug-01	-	12.75	-	625.99	-	-
MW-19-6	Monitoring Well	RMT, INC.	October 28, 1999	20.00	2.00	STEEL	0.02	10.00	20.00	10.00	S	754578.87	470443.10	40° 54' 17.5"	74° 34' 43.8"	636.78	636.78	636.44	24-Jul-01	-	10.03	-	626.41	-	-
																636.78	636.78	636.44	8//1/01	-	10.35	-	626.09	-	-
MW-19-7	Monitoring Well	RMT, INC.	October 29, 1999	20.00	2.00	STEEL	0.02	10.00	20.00	10.00	S	754595.66	470501.70	40° 54' 17.6"	74° 34' 43.1"	636.00	636.00	635.60	24-Jul-01	-	9.27	-	626.33	-	-
																636.00	636.00	635.60	01-Aug-01	-	9.60	-	626.00	-	-
MW-19-8	Monitoring Well	RMT, INC.	October 28, 1999	20.00	2.00	STEEL	0.02	11.00	20.00	9.00	S	754617.42	470493.65	40° 54' 17.8"	74° 34' 43.2"	636.44	636.44	635.96	24-Jul-01	-	9.63	-	626.33	-	-
																636.44	636.44	635.96	01-Aug-01	-	9.56	-	626.40	-	-
MW19-9D ⁽³⁾	Monitoring Well	RMT, INC.	July 10, 2001	35.00	2.00	STEEL	0.02	25.00	35.00	10.00	S	754590.49	470441.86	40° 54' 17.9"	74° 34' 42.4"	636.99	637.01	636.70	24-Jul-01	-	NM	-	-	-	-
																636.99	637.01	636.70	01-Aug-01	-	10.21	-	626.49	-	-
MW-20	Monitoring Well	ROY F. WESTON	May 21, 1991	14.00	4.00	STEEL	0.02	4.00	14.00	10.00	S	754550.52	470647.25	40° 54' 17.2"	74° 34' 41.2"	634.82	637.03	636.77	24-Jul-01	-	10.57	-	626.20	-	-
																634.82	637.03	636.77	01-Aug-01	-	NM	-	-	-	-

FOOTNOTES
(1) Horizontal Datum: New Jersey State Plane Coordinate System NAD 83. Vertical Datum: NGVD 29
(2) All elevation measurements were taken during the 3rd quarter monitoring event conducted by STL Edison
(3) MW19-9D not included in Potentiometric surface evaluation as the well was screened in a deeper interval within the shallow system
S: Shallow Water Bearing Unit
I: Intermediate Water Bearing Unit
NM: Not Measured

Figure 1
Site Location Map



NEW JERSEY



QUADRANGLE LOCATION



0 2000' 4000'

APPROXIMATE SCALE IN FEET

SOURCE

1. BASE MAP DEVELOPED FROM THE DOVER, NEW JERSEY 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1954, PHOTOREVISED 1981.



**LE CARPENTER
WHARTON, NEW JERSEY**

SITE LOCATION MAP

DRAWN BY: SJL

APPROVED BY: JDD

PROJECT NUMBER: 3868.23

FILE NUMBER: 38682350.DWG

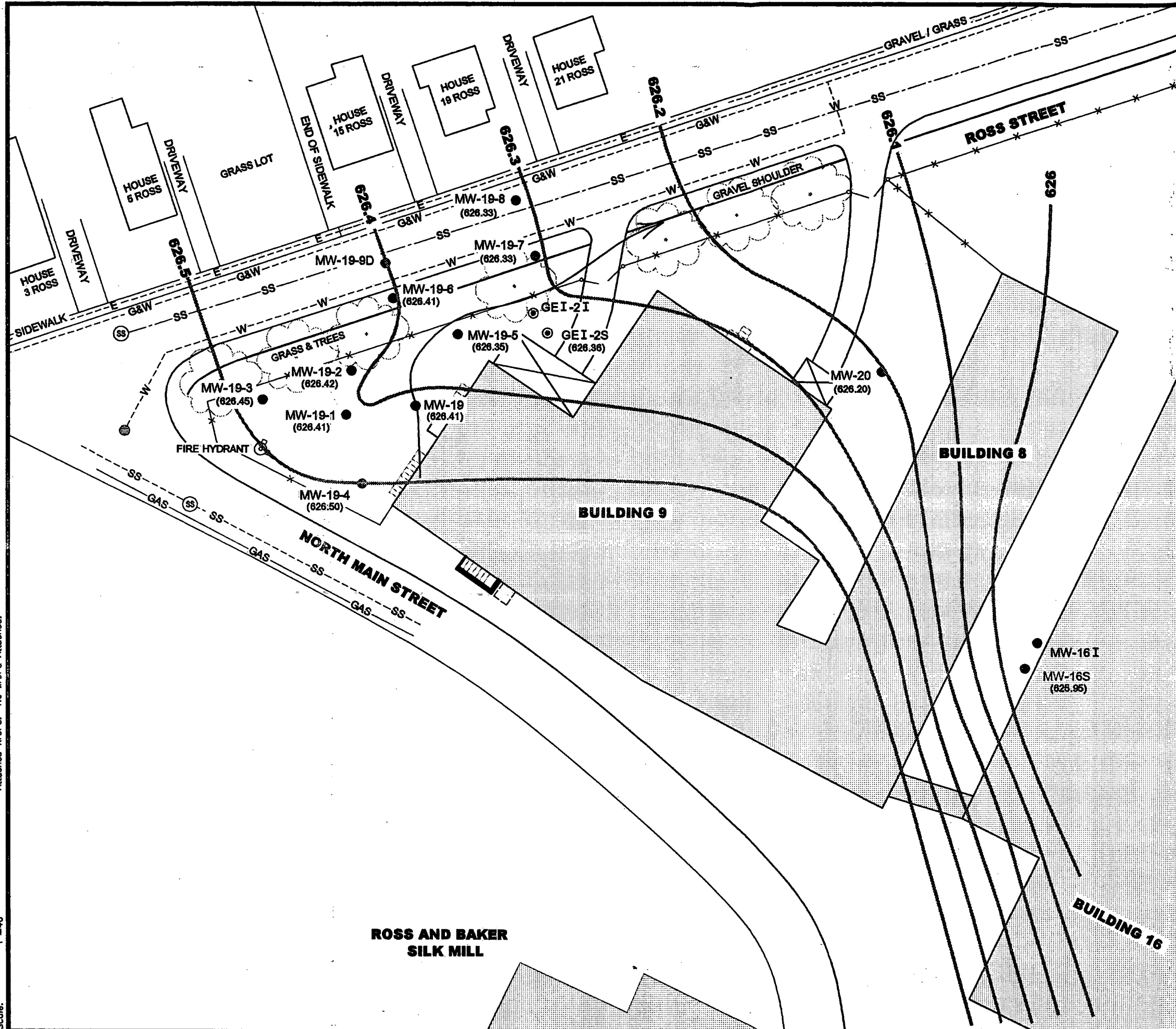
DATE: OCTOBER 2001

FIGURE 1

Figure 2

MW-19 Hot-Spot 1 Groundwater Elevation Contours for July 2001.

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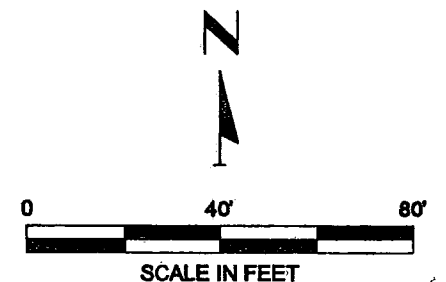


LEGEND

- *— FENCE LINE
- SS--- APPROXIMATE LOCATION OF ROCKAWAY RIVER REGIONAL INTERCEPTOR SEWER
- 626 ——— GROUNDWATER ELEVATION CONTOUR
- MW-19-7 (626.33) ● MONITORING WELL LOCATION AND NUMBER WITH GROUNDWATER ELEVATION
- GEI-2S (626.36) ⊙ GEOPROBE INSTALLED PIEZOMETER LOCATION AND NUMBER WITH GROUNDWATER ELEVATION
- SS--- SANITARY SEWER
- G&W--- GAS AND WATER
- E--- ELECTRIC
- W--- WATER
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES

1. GROUNDWATER ELEVATIONS BASED ON LEVELS MEASURED ON JULY 24, 2001.



L.E. CARPENTER
 WHARTON, NEW JERSEY

MW-19 / HOT SPOT 1 GROUNDWATER ELEVATION CONTOURS FOR JULY 2001

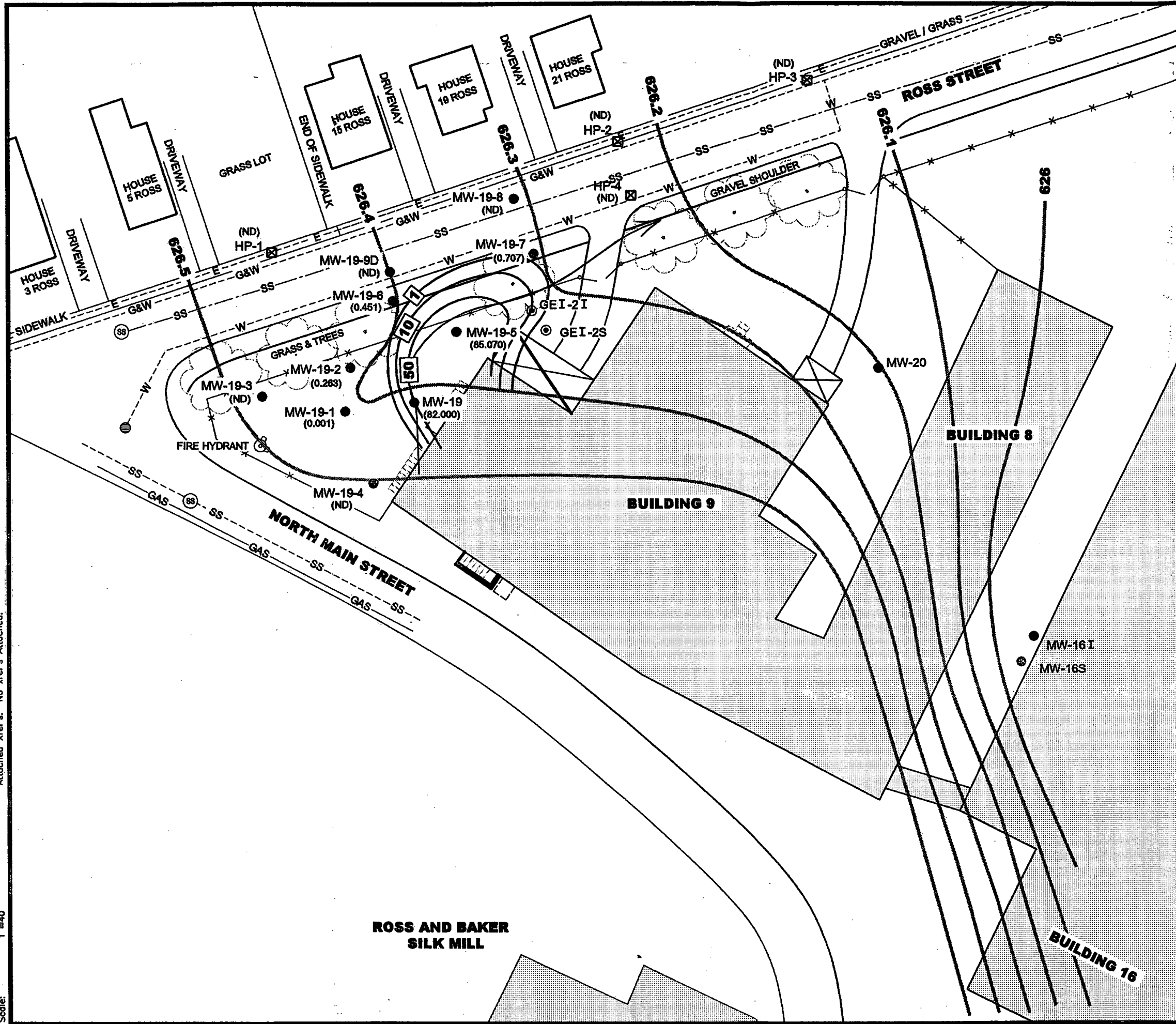
DRAWN BY:	LUCIDOS	PROJECT NUMBER:	3868.25
CHECKED BY:	JDD	FILE NUMBER:	38682502.DWG
APPROVED BY:	JDD	DATE:	OCTOBER 2001

RMT INC.
 1143 HIGHLAND DRIVE, SUITE B
 ANN ARBOR, MI. 48108-2237
 P.O. BOX 991 48106-0991
 PHONE: 734-971-7080
 FAX: 734-971-8022

Figure 3

**Isoconcentration Contours for Total BTEX (PPM) in Shallow Groundwater at the
MW19/Hot Spot Area; August 2001.**

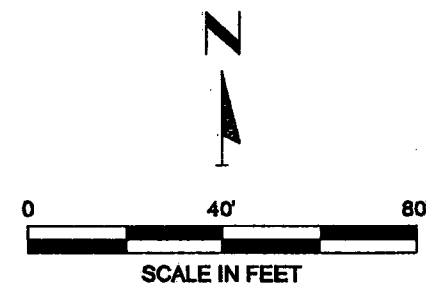
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 Plot Time:
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 Drawing Name:
 Operator Name:
 Scale:



LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- SS --- APPROXIMATE LOCATION OF ROCKAWAY RIVER REGIONAL INTERCEPTOR SEWER
- 626 --- GROUNDWATER ELEVATION CONTOUR
- MW-19-7 (135) ● MONITORING WELL LOCATION AND NUMBER WITH CONCENTRATION OF TOTAL BTEX (mg/L)
- GEI-2S ○ GEOPROBE INSTALLED PIEZOMETER LOCATION WITH CONCENTRATION OF TOTAL BTEX (mg/L)
- HP-3 ☒ APPROXIMATE LOCATION AND NUMBER OF HYDROPUNCH SAMPLES WITH CONCENTRATION OF TOTAL BTEX (mg/L)
- (NA) NOT ACCESSABLE (SNOW COVERED)
- (ND) NOT DETECTED
- SS --- SANITARY SEWER
- G&W --- GAS AND WATER
- E --- ELECTRIC
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- 50 --- ISOCONCENTRATION CONTOUR FOR TOTAL BTEX (ppm)

- NOTES**
- GROUNDWATER ELEVATIONS BASED ON LEVELS MEASURED ON JULY 24, 2001
 - SAMPLES COLLECTED ON AUGUST 1 AND 2, 2001.



LE CARPENTER
 WHARTON, NEW JERSEY

ISOCONCENTRATION CONTOURS FOR TOTAL BTEX (ppm) IN SHALLOW GROUNDWATER; MW-19 HOT SPOT AREA; AUGUST 2001

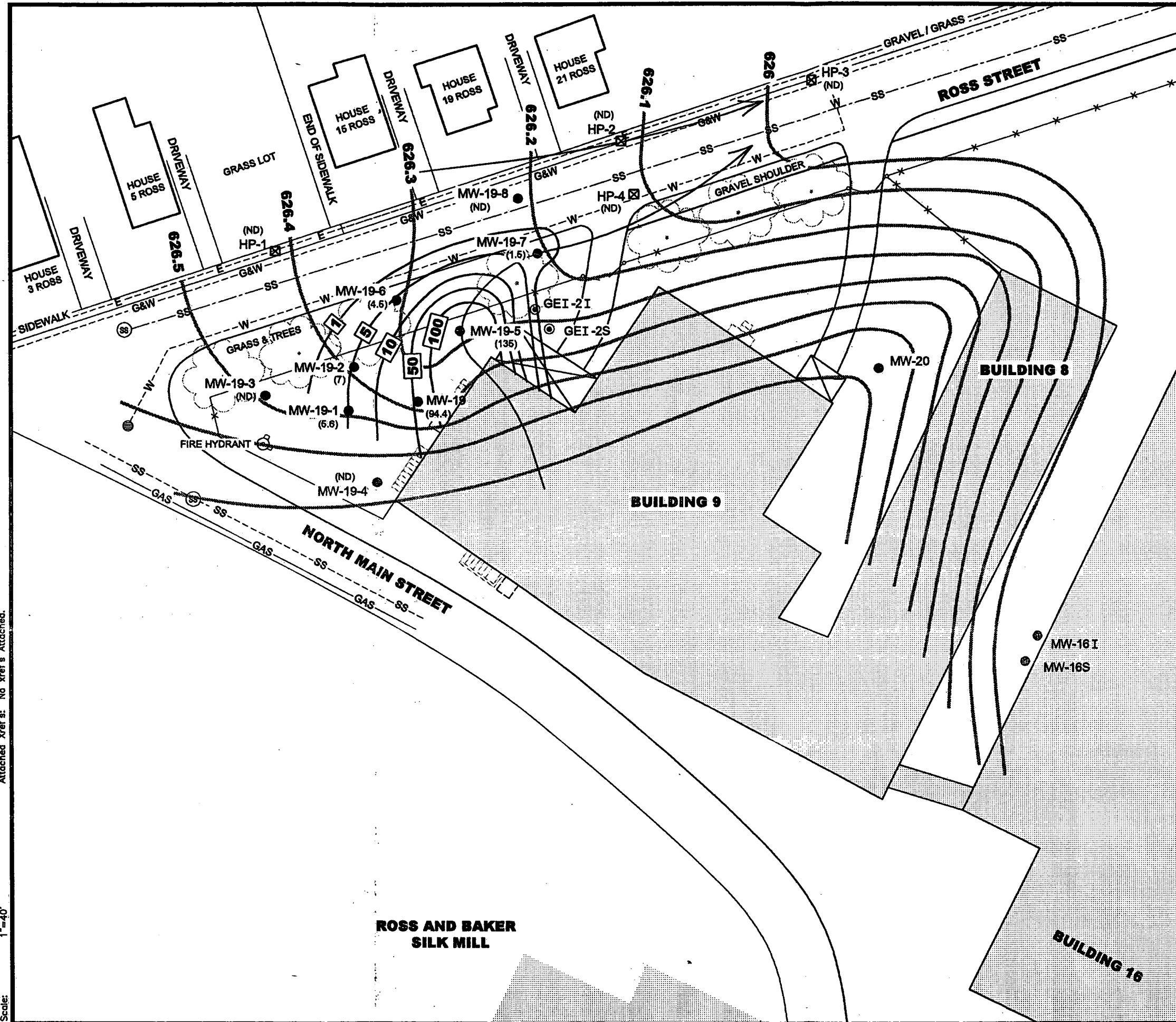
DRAWN BY:	LUCIDOS	PROJECT NUMBER:	3868.25
CHECKED BY:	JDD	FILE NUMBER:	38682503.DWG
APPROVED BY:	JDD	DATE:	OCTOBER 2001

RMT INC.
 1143 HIGHLAND DRIVE, SUITE B
 ANN ARBOR, MI. 48108-2237
 P.O. BOX 991 48106-0991
 PHONE: 734-971-7080
 FAX: 734-971-9022

FIGURE 3

Figure 4

**Isoconcentration Contours for Total BTEX (PPM) in Shallow Groundwater at the
MW19/Hot Spot Area; 1998 and 1999.**

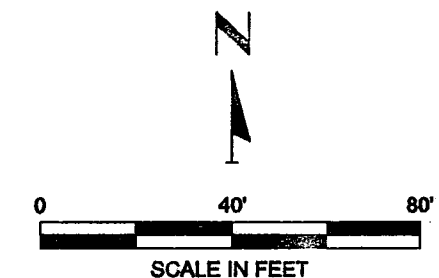


LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- SS --- APPROXIMATE LOCATION OF ROCKAWAY RIVER REGIONAL INTERCEPTOR SEWER
- 626 --- GROUNDWATER ELEVATION CONTOUR
- MW-19-7 (135) ● MONITORING WELL LOCATION AND NUMBER WITH CONCENTRATION OF TOTAL BTEX (mg/L)
- GEI-2S ● GEOPROBE INSTALLED PIEZOMETER LOCATION WITH CONCENTRATION OF TOTAL BTEX (mg/L)
- HP-3 □ APPROXIMATE LOCATION AND NUMBER OF HYDROPUNCH SAMPLES WITH CONCENTRATION OF TOTAL BTEX (mg/L)
- (NA) NOT ACCESSABLE (SNOW COVERED)
- (ND) NOT DETECTED
- SS --- SEWER
- G&W --- GAS AND WATER
- E --- ELECTRIC
- ➔ APPROXIMATE GROUNDWATER FLOW DIRECTION
- 50 --- ISOCONCENTRATION CONTOUR FOR TOTAL BTEX (ppm)

NOTES

1. GROUNDWATER ELEVATIONS BASED ON LEVELS MEASURED ON JANUARY 17, 2000.
2. SAMPLES FROM MW-19, MW-19-1, MW-19-2, MW-19-3, MW-19-4, AND MW-19-5 COLLECTED IN MARCH 1998. SAMPLES FROM MW-19-6, MW-19-7, AND MW-19-8 WERE COLLECTED IN NOVEMBER 1999.



L.E. CARPENTER
WHARTON, NEW JERSEY

ISOCONCENTRATION CONTOURS FOR TOTAL
BTEX (ppm) IN SHALLOW GROUNDWATER;
MW-19 HOT SPOT AREA; 1998 AND 1999

DRAWN BY:	SJL	PROJECT NUMBER:	3868.25
CHECKED BY:	JDD	FILE NUMBER:	38682504.DWG
APPROVED BY:	JDD	DATE:	OCTOBER 2001

RMT INC.

1143 HIGHLAND DRIVE, SUITE B
ANN ARBOR, MI. 48108-2237

P.O. BOX 991 48106-0991
PHONE: 734-971-7080
FAX: 734-971-9022

Attachment 1
Report Certification

REPORT CERTIFICATION
PURSUANT TO N.J.A.C. 7:26E-1.5

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement, which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Mr. Cristopher R. Anderson

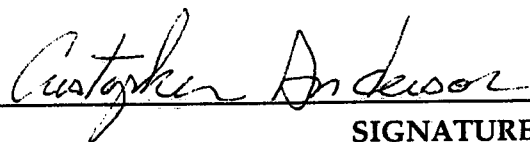
PRINTED NAME

Director, Environmental Services

TITLE

L.E. Carpenter & Company

COMPANY



SIGNATURE

OCT 16, 2001

DATE

Attachment 2

Geologic and Well Completion Log for MW19-9D

LOG OF TEST BORING



PROJECT NAME LEC
 LOCATION MW-19-9D, LEC
 CONTRACTOR Summit Drilling Company
 DRILLING METHOD Air rotary

BORING NO. MW19-9D
 SHEET NO. 1 OF 1
 PROJECT NO. 3868.25
 INSTALLATION 7/10/01
 SURFACE ELEV. _____
 BOREHOLE DIA. 6 IN.

SAMPLING NOTES

INTERVAL		RECOVERY	MOISTURE		DEPTH
NO.	TYPE	PID (ppm)			
1	SS	26/14/11/10	12	NR	5
2	SS	12/22/10/9	6	NR	
3	SS	10/7/11/12	1	NR	
4	SS	2/10/11/16	4	NR	
5	SS	10/9/9/18	0	NR	
					10
					15
					20
					25
					30
					35

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

BLACKTOP & GRAVEL.

SAND (SP), medium grained, few coarse sand, cobbles, medium brown.

SAND AND GRAVEL (SP-GP), medium sand and gravel, medium brown.

SAND AND GRAVEL (SP-GP), as above, wet.

GRAVEL (GP), with silt, sand and cobbles,

SAND AND GRAVEL (SP-GP), yellowish brown, running.

End of boring at 35 feet below ground surface.

GENERAL NOTES

DATE STARTED 7-10-01
 DATE COMPLETED 7-10-01
 RIG _____
 CREW CHIEF Rich
 LOGGED JPM CHECKED _____

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 10.0
 AT COMPLETION ▽ _____
 AFTER DRILLING _____
 CAVE-IN: DATE/TIME NA DEPTH NA
 WATER: DATE/TIME 7/10/01 DEPTH NA



ENVIRONMENTAL SPECIALISTS

Chimney Rock Road, Bldg. 9W
Bound Brook, NJ 08805
Telephone: (908) 722-4266
Toll Free: (800) 242-6648
FAX: (732) 356-1009
http://www.summitdrilling.com
email: info@summitdrilling.com

WELL LOG

WELL: MW19-9D DATE DRILLED: 07/10/2001 COORD #1: 25.02.397 PERMIT #1: 25-58293
COORD #2: PERMIT #2: COUNTY: Morris
SITE: L. E. Carpenter & Co., 107 North Main St., Wharton, NJ 07885
OWNER: L. E. Carpenter, 107 North Main Street, Wharton, NJ 07885
XSTREET: Ross Street
USE: Monitor
INNER CASING: S. Steel OUTER CASING: SCREEN TYPE 1: S.Steel DRILLING METHOD: Auger
DIAMETER: 2" DIAMETER: SCREEN TYPE 2: SAMPLING METHOD:
LENGTH: 25' LENGTH: DIAMETER: 2" HOLE DIA: 8", 8"
LENGTH 1: 10' TOTAL DEPTH: 35'
LENGTH 2:
SLOT SIZE: .020
NET WELL: 35' GAL PER MIN: 1/2
RAVEL PK SZ: Morie #2 STAT H2O LVL: 10'
DRILLER: Jeff Segreaves DEVELOPMENT METHOD: pump CASING SEAL: Portland
SURFACE COMPLETION: M DEVELOPMENT TIME: 1/2 OPEN HOLE:

DEPTH BELOW SURFACE FROM - TO	BLOWS PER 6" ON SAMPLER
0' - 2'	client
2' - 4'	client
4' - 6'	client
6' - 8'	client
8' - 10'	client

REMARKS / SOILS IDENTIFICATION

1" Asphalt.
35' Brown m/f sand boulders cobbles gravel.

Ground Surface

AT-Grade Protective
Watertight Manhole
Locking Compression Cap

2' x 2' Concrete Pad
Gravel Mix Concrete

S. Steel Casing
2" Diameter

Neat Cement Grout
(ASTM Type II, 5% Bentonite Added)
0' - 23'

S.Steel Screen
2" Diameter

Gravel Pack
23' - 35'

Bore Hole
8", 8" Diameter

Bottom Cap

0' - 25' Solid

25' - 35' Screen

Attachment 3

Well Permit, Monitoring Well Record & MW19-9D Form B Location Certification

WR-133M

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON, NJ

MONITORING WELL PERMIT

Permit No. _____

Mail To:

NJDEP
 BUREAU OF WATER ALLOCATION
 BOX 426
 TRENTON, NJ 08625-0426

VALID ONLY AFTER APPROVAL BY THE D.E.P.

COORD #:

25.02.397

Owner LE CARPENTER CO.
 Address 107 N. MAIN STREET
WHARTON NJ 07885

Driller Summit Drilling Co., Inc.
 Address Central Jersey Industrial Park
Chimney Rock Road, Building 9W
Bound Brook, NJ 08805

Name of Facility _____
 Address SAME

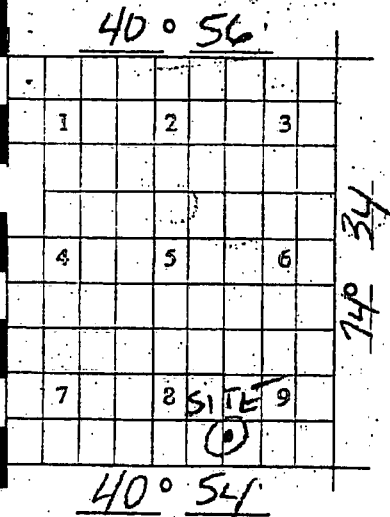
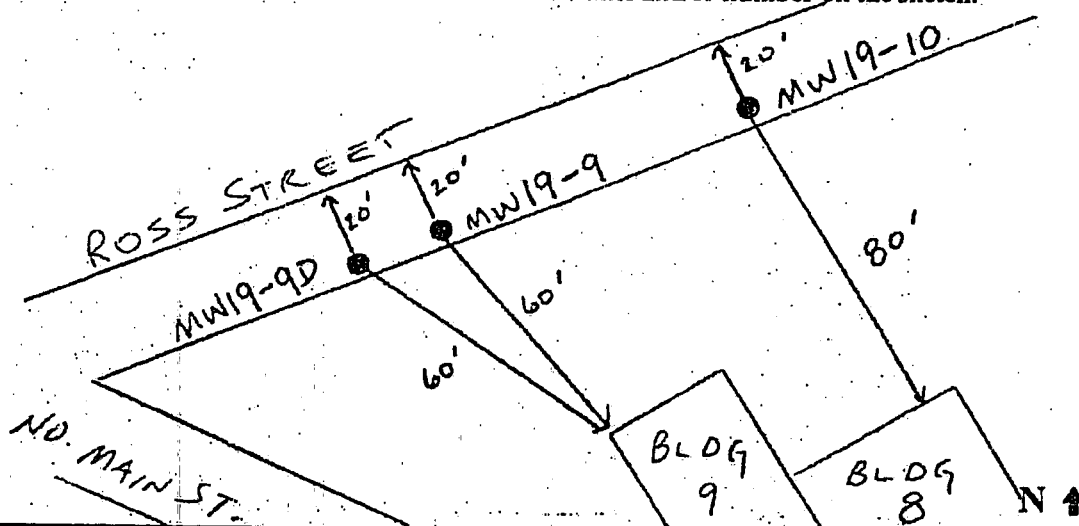
Diameter of Well(s)	2	Inches	Proposed Depth of Well(s)	35	Feet
# of Wells	3		Will pumping equipment be utilized?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Applied for (max. 10)			If Yes, give pump capacity		_____ cumulative GPM
Type of Well (see reverse)	MONITOR				

LOCATION OF WELL(S)

Lot # 2 Block # 801 Municipality WHARTON County MORRIS

State Atlas Map No. 25

Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.



MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- ☐ Spill Site
☐ ISRA Site
☐ CERCLA (Superfund) Site
☐ RCRA Site
☐ Underground Storage Tank Site
☐ Operational Ground Water Permit Site
☐ Pretreatment and Residuals Site
☐ Water and Hazardous Waste Enforcement Case
☐ Water Supply Aquifer Test Observation Well
☒ Other (explain) SUPERFUND SITE

CASE I.D. Number _____

This Space for Approval Stamp

WELL PERMIT APPROVED
 N.J.D.E.P.

JUN 4 2001

BUREAU OF WATER ALLOCATION

OR ☐ Issuance of this permit is subject to the conditions attached. (see next page)

☒ For monitoring purposes only

☒ The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.

PLEASE SEE IMPORTANT PROVISIONS PERTAINING TO THIS PERMIT.
 Compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

S-31-01

Signature of Driller

John Vost

Registration No.

J1544

Signature of Property Owner

John Malachuk (MS)

COPIES: Water Allocation - White Health Dept. - Yellow Owner - Blue Driller - White

MONITORING WELL CERTIFICATION FORM B LOCATION CERTIFICATION

Name of Owner: L.E. Carpenter & Company

Name of Facility: L.E. Carpenter & Company

Location: 170 North Main Street, Wharton, NJ 07885

Case Number(s): SRP# 002168748 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:

(This number must be permanently affixed to -
the well casing.)

2 5 - 5 8 2 9 3 -

Owners Well Number (As shown on application or plans):

MW-19-9D

Geographic Coordinates NAD 83 (to nearest 1/10 of second):

Longitude: West: 74°34'42.412"

Latitude: North 40°54'17.938"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 754590

East 470442

Elevation of Top of Inner Casing (cap off) at
reference mark (nearest 0.01') :

636.70'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify, here, assumed datum of 100', and give approximated actual elevation.)

Bench Mark NGS U 18 (681.78 NAVD 88) (682.52 NGVD 29)

Significant observations and notes All elevations are on NGVD 29 to conform to the existing wells

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of these individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false inaccurate, and complete information and I am committing a crime in the fourth degree if I make a false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

SEAL

James M. Stewart
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

8/31/01
DATE

James M. Stewart Lic # GS26108
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER

9622 Evans Street, Philadelphia, PA 19115 215 969 1577
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

Attachment 4
Laboratory Analytical Data

09/19/2001

RMT
527 Plymouth Road
Suite 406
Plymouth Meeting, PA 19462

Attention: Mr. John Mihalich

SEVERN
TRENT
SERVICES

STL Edison
777 New Durham Road
Edison, NJ 08817

Tel: 732-549-3900
Fax: 732-549-3679
www.stl-inc.com

Laboratory Results
Job No. N374 - LEC

Dear Mr. Mihalich:

Enclosed are the results you requested for the following sample(s) received at our laboratory on August 3, 2001.

<u>Lab No.</u>	<u>Client ID</u>	<u>Analysis Required</u>
292462	MW19	BTEX(GC/MS) DEHP
292463	MW19-1	BTEX(GC/MS) DEHP
292464	MW19-2	BTEX(GC/MS) DEHP
292465	MW19-3	BTEX(GC/MS) DEHP
292466	MW19-4	BTEX(GC/MS) DEHP
292467	MW19-5	BTEX(GC/MS) DEHP
292468	MW19-6	BTEX(GC/MS) DEHP
292469	MW19-7	BTEX(GC/MS) DEHP
292470	MW19-8	BTEX(GC/MS) DEHP



STL Edison is a part of Severn Trent Laboratories, Inc.

SEVERN

TRENT

SERVICES

STL Edison

777 New Durham Road
Edison, NJ 08817

Tel: 732-549-3900

Fax: 732-549-3679

www.stl-inc.com

Laboratory Results
Job No. N374 - LEC (cont'd)

<u>Lab No.</u>	<u>Client ID</u>	<u>Analysis Required</u>
292471	MW19-9D	BTEX(GC/MS) DEHP
292472	Trip_Blank	BTEX(GC/MS)
292473	DUPE-01	BTEX(GC/MS) DEHP
292474	FB-01	BTEX(GC/MS) DEHP
292475	FB-2	BTEX(GC/MS) DEHP

An invoice for our services is also enclosed. If you have any questions please contact your Project Manager, Robin Dean, at (732) 549-3900.

Very Truly Yours,



Michael J. Urban
Laboratory Director



STL Edison is a part of Severn Trent Laboratories, Inc.

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Analytical Results Summary

Client ID: MW19
Site: LEC

Lab Sample No: 292462
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.1
Lab File ID: v33400.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 500.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	95
Toluene	62000	90
Ethylbenzene	3000	95
Xylene (Total)	17000	95

Client ID: MW19-1
Site: LEC

Lab Sample No: 292463
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33403.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	1.2	0.2
Xylene (Total)	ND	0.2

Client ID: MW19-2
Site: LEC

Lab Sample No: 292464
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33404.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 2.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.4
Toluene	160	0.4
Ethylbenzene	21	0.4
Xylene (Total)	82	0.4

Client ID: MW19-3
Site: LEC

Lab Sample No: 292465
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33405.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: MW19-4
Site: LEC

Lab Sample No: 292466
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.1
Lab File ID: v33406.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: MW19-5
Site: LEC

Lab Sample No: 292467
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33407.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1000.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	190
Toluene	79000	180
Ethylbenzene	870	190
Xylene (Total)	5200	190

Client ID: MW19-6
Site: LEC

Lab Sample No: 292468
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33408.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 2.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.4
Toluene	390	0.4
Ethylbenzene	14	0.4
Xylene (Total)	47	0.4

Client ID: MW19-7
Site: LEC

Lab Sample No: 292469
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33409.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 2.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	6.7	0.4
Toluene	13	0.4
Ethylbenzene	6.6	0.4
Xylene (Total)	680	0.4

Client ID: MW19-8
Site: LEC

Lab Sample No: 292470
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33410.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	0.5	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: MW19-9D
Site: LEC

Lab Sample No: 292471
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33411.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: Trip_Blank
Site: LEC

Lab Sample No: 292472
Lab Job No: N374

Date Sampled: 07/30/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33412.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: DUPE-01
Site: LEC

Lab Sample No: 292473
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33413.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 2.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.4
Toluene	260	0.4
Ethylbenzene	9.5	0.4
Xylene (Total)	38	0.4

Client ID: FB-01
Site: LEC

Lab Sample No: 292474
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33414.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	0.7	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: FB-2
Site: LEC

Lab Sample No: 292475
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Analyzed: 08/11/01
GC Column: DB624
Instrument ID: VOAMS7.i
Lab File ID: v33415.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2

Client ID: MW19
Site: LEC

Lab Sample No: 292462
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/17/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9843.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	2.9	0.5

Client ID: MW19-1
Site: LEC

Lab Sample No: 292463
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/13/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9778.d

Matrix: WATER
Level: LOW
Sample Volume: 980 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	85	0.4

Client ID: MW19-2
Site: LEC

Lab Sample No: 292464
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/13/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9779.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	16	0.5

Client ID: MW19-3
Site: LEC

Lab Sample No: 292465
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/13/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9780.d

Matrix: WATER
Level: LOW
Sample Volume: 950 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	0.5

Client ID: MW19-4
Site: LEC

Lab Sample No: 292466
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.1
Lab File ID: t9781.d

Matrix: WATER
Level: LOW
Sample Volume: 950 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	0.5

Client ID: MW19-5
Site: LEC

Lab Sample No: 292467
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/17/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9844.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	3.2	0.5

Client ID: MW19-6
Site: LEC

Lab Sample No: 292468
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9782.d

Matrix: WATER
Level: LOW
Sample Volume: 950 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	28	0.5

Client ID: MW19-7
Site: LEC

Lab Sample No: 292469
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/17/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9845.d

Matrix: WATER
Level: LOW
Sample Volume: 980 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	0.5

Client ID: MW19-8
Site: LEC

Lab Sample No: 292470
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9783.d

Matrix: WATER
Level: LOW
Sample Volume: 980 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	0.4

Client ID: MW19-9D
Site: LEC

Lab Sample No: 292471
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9784.d

Matrix: WATER
Level: LOW
Sample Volume: 960 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	0.5	0.5

Client ID: DUPE-01
Site: LEC

Lab Sample No: 292473
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9785.d

Matrix: WATER
Level: LOW
Sample Volume: 950 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	36	0.5

Client ID: FB-01
Site: LEC

Lab Sample No: 292474
Lab Job No: N374

Date Sampled: 08/01/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9786.d

Matrix: WATER
Level: LOW
Sample Volume: 910 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	0.5

Client ID: FB-2
Site: LEC

Lab Sample No: 292475
Lab Job No: N374

Date Sampled: 08/02/01
Date Received: 08/03/01
Date Extracted: 08/07/01
Date Analyzed: 08/14/01
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t9787.d

Matrix: WATER
Level: LOW
Sample Volume: 960 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	2.4	0.5

General Information
Chain of Custody

STL EDISON

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE 1 OF 2

Name (for report and invoice.) John Mihalich		Samplers Name (Printed) John Mihalich		Site/Project Identification LEC	
Company RMT		P.O. #		State (Location of site): NJ: <input checked="" type="checkbox"/> NY: <input type="checkbox"/> Other:	
Address 527 Plymouth Rd		Analysis Turnaround Time Standard <input checked="" type="checkbox"/> Rush Charges Authorized For: 2 Week <input type="checkbox"/> 1 Week <input type="checkbox"/> Other <input type="checkbox"/>		Regulatory Program: Superfund	
City Plymouth NJ State PA		Phone 6108340490 Fax 6108341469		LAB USE ONLY Project No: Job No: N374 Sample Numbers	
Sample Identification	Date	Time	Matrix	No. of Cont.	
MW19	8-2-01	1457	W	4	X X
MW19-1	"	1108			
MW19-2	8-1-01	1835			
MW19-3	8-2-01	933			
MW19-4	8-2-01	1306			
MW19-5	8-2-01				
MW19-6	8-1-01	1315			
MW19-7	8-1-01	1542			
MW19-8	8-1-01	1728			
MW19-9D	8-1-01	1155	↓	↓	↓
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH 6 = Other _____, 7 = Other _____					
Soil: _____ Water: _____					




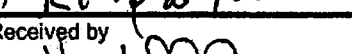
Special Instructions

Water Metals Filtered (Yes/No)?

Relinquished by 1) [Signature]	Company RMT	Date / Time 8-30-01 0800	Received by 1) [Signature]	Company STL Edison SJO
Relinquished by 2) [Signature]	Company STL Edison SJO	Date / Time 8-30-01 1430	Received by 2) [Signature]	Company Ralph Head
Relinquished by 3) _____	Company _____	Date / Time 	Received by 3) _____	Company _____
Relinquished by 4) _____	Company _____	Date / Time 	Received by 4) _____	Company _____

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

[illegible]

Special Instructions			Water Metals Filtered (Yes/No)?	
Relinquished by 1) 	Company RMT	Date / Time 8-30-01 0800	Received by 1) 	Company STL Edison SJO Ralph Head
Relinquished by 2) 	Company STL Edison SJO Ralph Head	Date / Time 8-3-01 1430	Received by 2) 	Company
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Chronicles

INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Edison

777 New Durham Road, Edison, New Jersey
08817

Job No: N374

Site: LEC

Client: RMT/Four Nines

VOAMS

WATER - 624

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
292462	8/2/2001	8/3/2001			8-11-01	DRL	5841
292463	8/2/2001	8/3/2001					
292465	8/2/2001	8/3/2001					
292466	8/2/2001	8/3/2001					
292467	8/2/2001	8/3/2001					
292475	8/2/2001	8/3/2001			8-11-01	DRL	5819

INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Edison

777 New Durham Road, Edison, New Jersey
08817

Job No: N374

Site: LEC

Client: RMT/Four Nines

VOAMS

WATER - 624

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
292464	8/1/2001	8/3/2001			8-11-01	DEL	5841
292468	8/1/2001	8/3/2001					
292469	8/1/2001	8/3/2001					
292470	8/1/2001	8/3/2001					
292471	8/1/2001	8/3/2001					
292473	8/1/2001	8/3/2001					
292474	8/1/2001	8/3/2001					

**INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Edison**

**777 New Durham Road, Edison, New Jersey
08817**

Job No: N374

Site: LEC

Client: RMT/Four Nines

VOAMS

WATER - 624

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
292472	7/30/2001	8/3/2001			8-11-01	DRL	5841

INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Edison

777 New Durham Road, Edison, New Jersey
08817

Job No: N374

Site: LEC

Client: RMT/Four Nines

BNAMS

WATER - 625

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
292462	8/2/2001	8/3/2001	8-7-01	JCR	8-17-01	EM	6549
292463	8/2/2001	8/3/2001	↓	↓	8-13-01	WB	↓
292465	8/2/2001	8/3/2001			↓	↓	
292466	8/2/2001	8/3/2001			8-14-01		
292467	8/2/2001	8/3/2001			8-17-01	EM	
292475	8/2/2001	8/3/2001			8-14-01	WB	

INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Edison

777 New Durham Road, Edison, New Jersey
08817

Job No: N374

Site: LEC

Client: RMT/Four Nines

BNAMS

WATER - 625

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
292464	8/1/2001	8/3/2001	8-07-01	JCR	8-13-01	WB	6549
292468	8/1/2001	8/3/2001	↓	↓	8-14-01	↓	↓
292469	8/1/2001	8/3/2001	↓	↓	8-17-01	EM	↓
292470	8/1/2001	8/3/2001	↓	↓	8-14-01	WB	↓
292471	8/1/2001	8/3/2001	↓	↓	↓	↓	↓
292473	8/1/2001	8/3/2001	↓	↓	↓	↓	↓
292474	8/1/2001	8/3/2001	↓	↓	↓	↓	↓

Methodology Review

Analytical Methodology Summary

Volatile Organics:

Unless otherwise specified, water samples are analyzed for volatile organics by purge and trap GC/MS as specified in EPA Method 624. Drinking water samples are analyzed by EPA Method 524.2. Solid samples are analyzed for volatile organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8260B. Water samples are analyzed for volatile organics by purge and trap GC/PID and GC/ELCD as specified in EPA Methods 601 and 602. Solid samples are analyzed by GC/PID and GC/ELCD in accordance with SW-846, 3rd Edition Method 8021B.

Acid and Base/Neutral Extractable Organics:

Unless otherwise specified, water samples are analyzed for acid and/or base/neutral extractable organics by GC/MS in accordance with EPA Method 625. Solids are analyzed for acid and/or base/neutral extractable organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8270C.

GC/MS Nontarget Compound Analysis:

Analysis for nontarget compounds is conducted, upon request, in conjunction with GC/MS analyses by EPA Methods 624, 625, 8260B and 8270C. Nontarget compound analysis is conducted using a forward library search of the EPA/NIH/NBS mass spectral library of compounds at the greatest apparent concentration (10% or greater of the nearest internal standard) in each organic fraction (15 for volatile, 15 for base/neutrals and 10 for acid extractables).

Organochlorine Pesticides and PCBs:

Unless otherwise specified, water samples are analyzed for organochlorine pesticides and PCBs by dual column gas chromatography with electron capture detectors as specified in EPA Method 608. Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8081A for organochlorine pesticides and Method 8082 for PCBs.

Total Petroleum Hydrocarbons:

Water samples are analyzed for petroleum hydrocarbons by I.R. using EPA Method 418.1. Solid samples are prepared for analysis by soxhlet extraction consistent with the March 1990 N.J. DEP "Remedial Investigation Guide" Appendix A, page 52, and analyzed by U.S. EPA Method 418.1

Metals Analysis:

Metals analyses are performed by any of four techniques specified by a Method Code provided on each data report page, as follows:

- P - Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP)
- A - Flame Atomic Absorption
- F - Furnace Atomic Absorption
- CV - Manual Cold Vapor (Mercury)

Water samples are digested and analyzed using EPA methods provided in "Methods for Chemical Analysis of Water and Wastewater" (EPA 600/4-79-020). Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition); samples are digested according to Method 3050B "Acid Digestion of Soil, Sediments and Sludges."

Specific method references for ICP analyses are water Method 200.7 and solid Method 6010B. Mercury analyses are conducted by the manual cold vapor technique specified by water Method 245.1 and solid Method 7471A. Other specific Atomic Absorption method references are as follows:

Element	Water Test Method		Solid Test Method	
	Flame	Furnace	Flame	Furnace
Aluminum	202.1	202.2	7020	--
Antimony	204.1	204.2	7040	7041
Arsenic	--	206.2	--	7060
Barium	208.1	--	7080	--
Beryllium	210.1	210.2	7090	7091
Cadmium	213.1	213.2	7130	7131
Calcium	215.1	--	7140	--
Chromium, Total	218.1	218.2	7190	7191
Chromium, (+6)	218.4	218.5	7197	7195
Cobalt	219.1	219.2	7200	7201
Copper	220.1	220.2	7210	--
Iron	236.1	236.2	7380	--
Lead	239.1	239.2	7420	7421
Magnesium	242.1	--	7450	--
Manganese	243.1	243.2	7460	--
Nickel	249.1	249.2	7520	--
Potassium	258.1	--	7610	--
Selenium	--	270.2	--	7740
Silver	272.1	272.2	7760	--
Sodium	273.1	--	7770	--
Tin	283.1	283.2	7870	--
Thallium	279.1	279.2	7840	7841
Vanadium	286.1	286.2	7910	7911
Zinc	289.1	289.2	7950	--

Cyanide:

Water samples are analyzed for cyanide using EPA Method 335.3. Cyanide is determined in solid samples as specified in the EPA Contract Laboratory Program IFB dated July 1988, revised February 1989.

Phenols:

Water samples are analyzed for total phenols using EPA Method 420.2. Total phenols are determined in solid samples by preparing the sample as outlined in the EPA Contract Laboratory Program IFB for cyanide, followed by a phenols determination using EPA Method 420.1.

Cleanup of Semivolatile Extracts:

Upon request Method 3611B Alumina Column Cleanup and/or Method 3650B Acid-Base Partition Cleanup are performed to improve detection limits by the removal of saturated hydrocarbon interferences.

Hazardous Waste Characteristics:

Samples for hazardous waste characteristics are analyzed as specified in the U.S. EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition). Specific method references are as follows:

- Ignitability - Method 1020A
- Corrosivity - Water pH Method 9040B
Soil pH Method 9045C
- Reactivity - Chapter 7, Section 7.3.3 and 7.3.4
respectively for hydrogen cyanide and
hydrogen sulfide release
- Toxicity - TCLP Method 1311

Miscellaneous Parameters:

Additional analyses performed on both aqueous and solid samples are in accordance with methods published in the following references:

- Test Methods for Evaluating Solid Wastes, SW-846 3rd Edition, November 1986.
- Standard Methods for the Examination of Water and Wastewater, 17th Edition.
- Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, 1979.

Data Reporting Qualifiers

DATA REPORTING QUALIFIERS

- ND - The compound was not detected at the indicated concentration.
- J - Mass spectral data indicates the presence of a compound that meets the identification criteria. The result is less than the specified detection limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.
- * - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

Non-Conformance Summary

NON-CONFORMANCE SUMMARY

STL Edison Job Number: N374

Volatile Organics Analysis:

All data conforms with method requirements _____; or
Analysis was not requested _____; or

Non-conformance for the specific samples listed is as follows:

(Method 624: OA BATCH 5841) recovery of Toluene is
outs. of QC limits in the MS due to high levels of
Toluene in the wspites sample. Bmk spike recovery
meets QC limits

See continuation page if checked ()

Base/Neutral and/or Acid Extractable Organics Analysis:

All data conforms with method requirements ✓; or
Analysis was not requested _____; or

Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

PCBs and/or Organochlorine Pesticides Analysis:

All data conforms with method requirements _____; or
Analysis was not requested ✓; or

Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Page 1 of 2

Non-conformance Summary, Page 2 of 2
STL Edison Job Number: N374

Metals Analysis:

All data conforms with method requirements _____; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Total Petroleum Hydrocarbons Analysis:

All data conforms with method requirements _____; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

General Chemistry/Disposal Analysis:

All data conforms with method requirements _____; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Signature of

Laboratory Manager:

 Date: 9-19-01